

What is Chronic Thromboembolic Pulmonary Hypertension (CTEPH)?



UHN

Normally, your heart and lungs work together to let the blood returning from body (blood that is low in oxygen) move easily through your lungs. The lungs fill your blood with oxygen every time your heart beats.

- The blood returning from your body that is low in oxygen enters the right side of your heart.
- The blood moves through the right atrium (RA), then into the right ventricle (RV).
- The right ventricle (RV) pumps the blood through the pulmonary artery and through the millions of blood vessels in your lungs.
- The blood picks up oxygen from the lungs, then moves into the left atrium of your heart (LA), then to the left ventricle (LV).
- The left ventricle (LV) pumps the oxygen – rich blood from the lungs to the rest of your body. Your body uses the oxygen in your blood, and then the blood returns to your heart.
- This cycle happens with every heartbeat.

If you have Chronic Thromboembolic Pulmonary Hypertension (CTEPH), you have blood clots in the arteries (blood vessels) of your lungs. These clots cause a narrowing or blockage of the blood flow through your lungs, therefore causing high pressure in the arteries of your lungs.

These blockages also make it hard for the blood to move through the arteries of your lungs and collect oxygen, which will make you feel short of breath.

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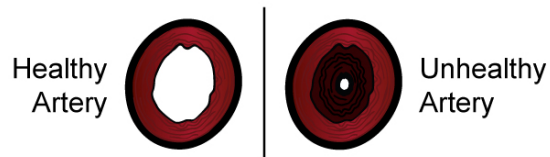
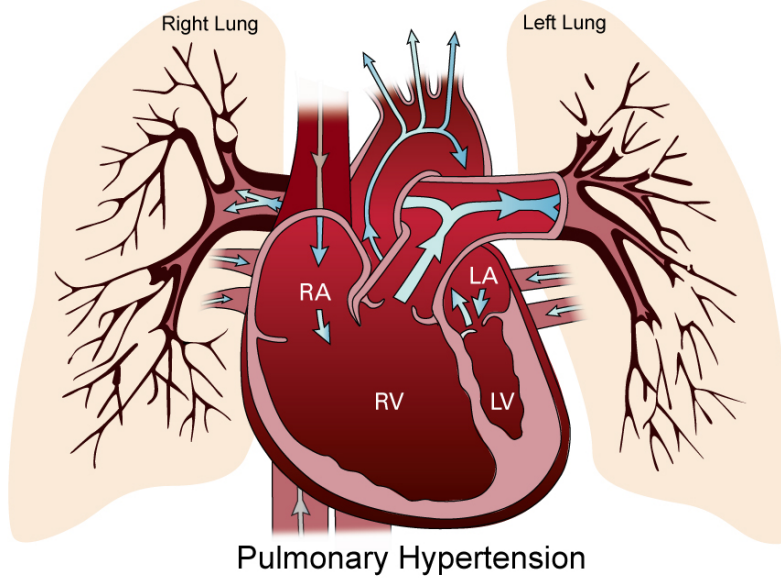
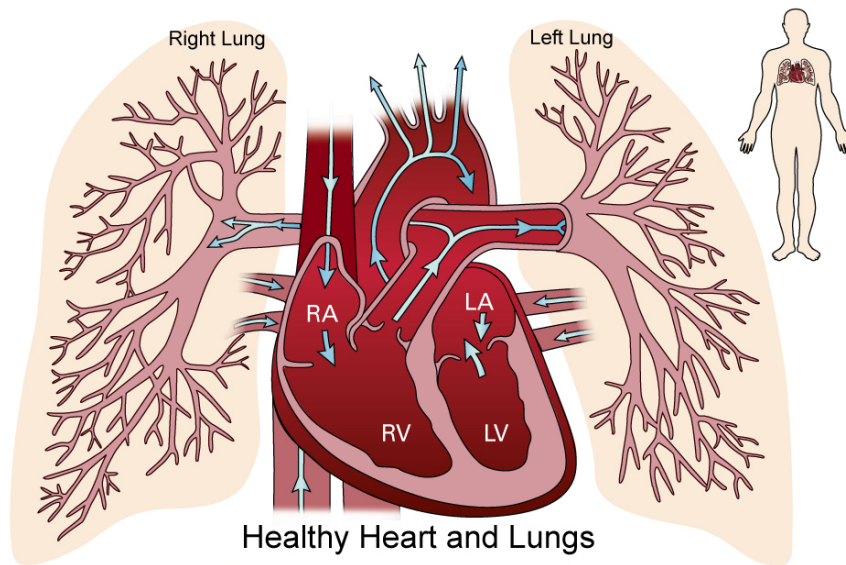
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If your CTEPH is not treated:

Over time, the right side of the heart becomes “stressed” and does not work well because it is hard for the right ventricle (RV) to pump blood through the high pressure areas of your lungs.

The blood in your heart backs up and may cause swelling in your legs and stomach.

Without treatment, the right side of your heart will become stressed, enlarged and unable to cope with blood volumes.

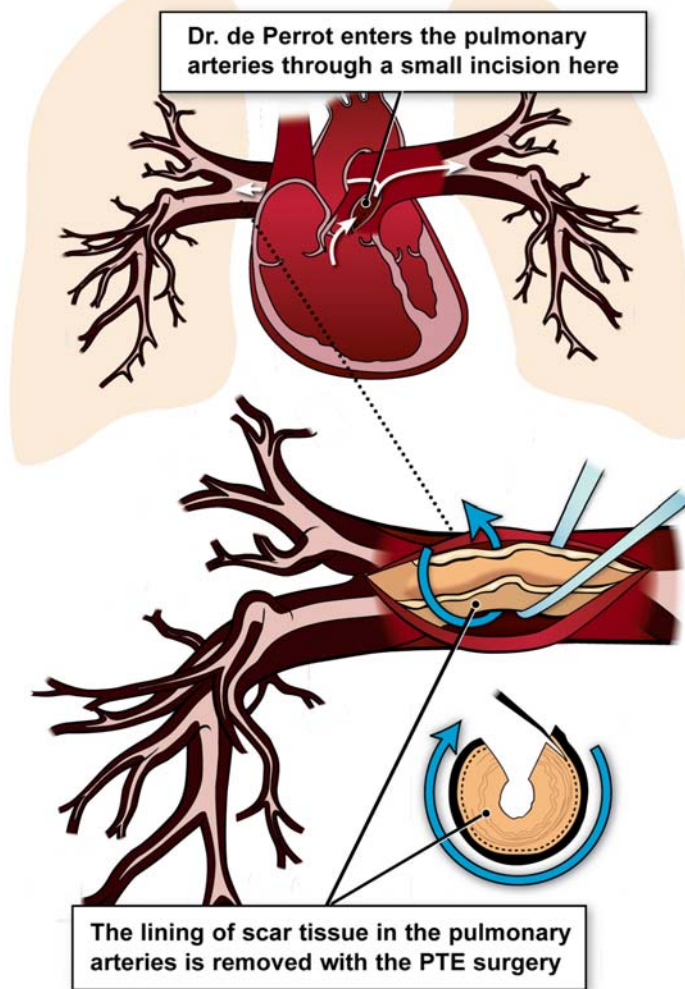
Why am I seeing a surgeon? What is Pulmonary Thromboendarterectomy (PTE)?

You are seeing a surgeon because of the narrowing of the arteries in your lungs. Over time, the blood clots in the arteries of your lungs have caused scar tissue to form. You are here to be seen by a surgeon, Dr. de Perrot, who will talk to you and decide if having surgery to remove the scar tissue from these arteries is right for you. This surgery is called Pulmonary Thromboendarterectomy (PTE).

If it is possible for the scar tissue to be removed, it will:

- Improve the blood flow inside your lungs.
- Lower the work of the right side of your heart.
- Improve your shortness of breath, and hopefully make it possible for you to return to your normal activities.

Thromboendarterectomy (PTE)



What tests are done to decide if I need surgery?

You will need to have many tests done to help your surgeon decide if surgery is the best option for you. You may have had some of these tests already; however, we may need to do them again.

Tests include:

- Echocardiogram (ECHO) – ultrasound of your heart
- Electrocardiogram (EKG or ECG) – recording of the electrical activity of your heart
- CT scan - special type of detailed x-ray
- Pulmonary angiogram - intravenous (IV) dye will be injected into your vein and will travel to the vessels of your lungs to help us see the blockages
- Right and left heart catheterization – a flexible tube enters your body through your groin area to:
 - Measure the pressures of the right side of the heart
 - Inject IV dye to see if there is narrowing of your coronary (heart) arteries (blood vessels)
- Blood work
- Femoral and Carotid Doppler – ultrasound of leg and neck veins
- Pulmonary Function Test (PFT) – lung volume (breathing) tests
- VQ scan
 - Dye is injected through an IV into your veins
 - A special camera traces the dye and records where the blockages in the blood vessels of your lungs are

Once all of the tests are done, the surgeon and the surgical team will meet to discuss if surgery is right for you. Your surgeon will talk to you about the surgery, answer any questions you may have, and then ask for your consent to do the surgery.

If surgery is not the best option for you, a referral will be made for you to be seen by the Pulmonary Hypertension program, who can best decide how to treat your pulmonary hypertension

How is the surgery done?

The PTE surgery to remove the blood clots in your lungs takes about 8 hours. The surgery will be discussed in greater detail by Dr. de Perrot and his team. In the operating room you will be prepared for your surgery. You will receive an intravenous (IV) and medication to sedate you before you are

prepared for the operation. To access your heart and lungs, your chest bone will need to be cut. Your blood will be passed through a heart-lung bypass machine so the surgery can be done on the arteries in your lungs. The bypass machine will also protect your body and organs during surgery by cooling your body to half its normal body temperature. This allows for safer removal of the scar tissue from the pulmonary (lung) vessels. An incision (cut) is made in the pulmonary artery (see diagram) so the scar tissue can be reached. Using a very delicate technique the scar tissue is removed from the inside of the artery walls. Once the scar tissue is removed the incision is stitched back together. Your chest bone is wired back together so that it can heal. After the surgery is complete, you will be transferred to the intensive care unit (ICU.)

Will I need to stay on Coumadin® (Warfarin)?

Even after surgery, you will still be at risk for new blood clots, so you will always be on Coumadin® (Warfarin) or another anticoagulant (blood thinner) medication. It is important that you:

1. Continue to have your INR level (thinness of your blood) checked as instructed.
2. Never stop or adjust your Coumadin® (Warfarin) dose unless you have been told to do so by your doctor or nurse.

In few cases some people will need to remain on blood thinner injections.

How do I contact Dr. de Perrot's clinic?

If you have questions about booking tests or appointments, please contact:

Susan Beaudoin – Clinical Assistant

Phone: 416-340-5549

Pager: 416-790-0758

Fax: 416-340-3478

Susan.Beaudoin@uhn.on.ca

If you have questions about your health or surgical questions, please contact:

Laura Pletsch RN - Coordinator

Phone: 416-340-3506

Laura.pletsch@uhn.on.ca